

ABSTRACT

An object of the present invention is to provide an option of non-reducing saccharide by providing a novel non-reducing saccharide composed of glucose as constituents and to provide a novel enzyme forming the non-reducing saccharide, a method and process for producing the same, a DNA encoding the enzyme, a recombinant DNA and transformant comprising the DNA, a composition comprising the non-reducing saccharide, and uses thereof. The present invention solves the above object by providing a novel cyclic saccharide having a structure of *cyclo*($\rightarrow 6$)- α -D-glucopyranosyl-(1 \rightarrow 4)- α -D-glucopyranosyl-(1 \rightarrow 6)- α -D-glucopyranosyl-(1 \rightarrow 4)- α -D-glucopyranosyl-(1 \rightarrow), cyclic maltosylmaltose, novel cyclic maltosylmaltose-forming enzyme, a method and process for producing the same, a DNA encoding the enzyme, a recombinant DNA and transformant comprising the DNA, a composition comprising the cyclic maltosylmaltose or a saccharide composition comprising the same, and uses thereof.